REMARKS

In response to the Office Action mailed May 17, 2005, the Applicant has combined the limitations of Claims 1 and 2, cancelled Claim 2 and amended Claims 10 and 12 to overcome the rejection under 35 U.S.C. § 112. The Applicant would like to thank Examiner Sandy for his proposal for amendment of Claims 10 and 12 to overcome the rejection under 35 U.S.C. § 112.

As discussed further below, the claims as filed were rejected by the Examiner as either anticipated by (35 U.S.C. § 102) or obvious from (35 U.S.C. § 103) ***several prior references***. Although ***as admitted by the Examiner*** the cited prior art does not disclose or suggest (1) the claimed dimensional relationship between the length and diameter of the tubular barrel or (2) the specifically claimed hardness of the claimed self-riveting fastener, the Examiner held that the claimed dimensional relationship was a "mere change in size of a component" and thus obvious and the hardness was an "obvious design choice." The Applicant respectfully traverses these findings.

As set forth in the specification of this application, although the prior male self-riveting fasteners as disclosed, for example, in U.S. Patent Nos. 4,915,558, 5,092,724 and 5,868,535 (all assigned to the predecessor in interest of this application), such fasteners are ***not suitable for high performance applications***, as follows:

> [00002]: Although the male fastener and method of installation (disclosed in the prior art) has been commercially successful, the male fastener and method of assembly is ***not suitable for high performance applications***, such as automotive seat belt retaining studs, wherein the fastener element must be formed of a high strength steel, or in applications having a panel thickness of greater than 2mm. It has been found that the barrel portion will crack when deformed into a U-shape as disclosed in U.S. Patent No. 4,915,558, resulting in poor male fastener and panel assembly integrity.

Thus, the dimensional relation between the diameter and length of the pilot portion, the cylindrical configuration of the pilot portion and the hardness are ***not a mere change in size of a component*** or ***an obvious design choice***. For example, in *Gardner v. TEC Systems, Inc.*, 725 F. 2d. 1338 (Fed. Cir. 1984), cert. denied, 469 U.S. 830 (1984) ***cited by the Examiner*** on page 6, where the recitation of relative dimensions of the claimed device ***performs differently than the prior art***, the claimed device ***is patentably distinct from the prior art***. As set forth in the specification cited above, if the prior self-riveting fasteners are heat treated to a hardness of greater than 30 Rockwell C and installed as disclosed in the prior art, the barrel portion ***will crack***. Thus, it is not a mere matter of choice to select a hardness greater than 30 Rockwell C for a particular application and the prior art ***does not disclose this hardness because it will not work***. The Examiner is ***incorrect*** in his finding that the hardness of the self-riveting fastener of this invention is selected based upon the hardness of the panel (page 7 of the Office Action). The hardness was ***required*** for "high performance applications," and it is not possible to simply heat treat the self-riveting fasteners disclosed in the prior art because the barrel portion will crack during installation. Thus, the inner relation between the configuration, dimensional relation and the hardness results in a ***new application*** and ***performs differently than the prior art***. As the Examiner will understand, there has been a ***long felt need*** for a self-riveting fastener for high performance applications, such as automotive seat belt studs which has not been fulfilled by the prior art.

Finally, as set forth in the specification of this application in paragraph [00028], actual testing of the male fastener and panel assembly "results in a very secure installation and avoids cracking of the barrel **28** even where the self-riveting male fastener element **20** is formed of a high strength carbon steel which has been heat treated to a hardness of **30**

Rockwell C or greater." The test results cited in this paragraph of the specification "indicates that the shank portion 22 will fracture before the stud is either rotated in the panel or pulled out of the panel following installation" and "may also be installed in relatively thick panels, such as steel panels having a thickness of 3.5mm." The improved performance of the self-riveting fastener of this invention is not merely a change in shape or size or a matter of choice, but the fastener performs a new function in high performance applications which fulfills a long felt need.

The following is responsive to the specific rejections by the Examiner under 35 U.S.C. § 102(e), 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).

US 2005/0025605 A1 of Vrana, et al.

Claims 1 and 3 to 7 were rejected by the Examiner as anticipated by the ***Vrana, et al.*** reference under 35 U.S.C. § 102(e). First, the Applicant respectfully traverses this rejection on the bases that the ***Vrana, et al.*** reference is assigned to the assignee of this application under 35 U.S.C. § 102(e). Further, as discussed below, the locator stud disclosed in the ***Vrana, et al.*** reference ***does not anticipate the rejected claims of this application.*** As set forth in the Background of the Invention of the ***Vrana, et al.*** reference, locator studs or pins are used in mass production applications "to accurately locate one component relative to a second component" (paragraph [0002]). The locator stud disclosed in the ***Vrana, et al.*** reference would ***not be suitable for attaching one component to another and is certainly not a male self-riveting fastener element.*** A locator stud has very poor pull-off strength and would be completely unsuitable for "high performance applications." The locator stud disclosed in the ***Vrana, et al.*** reference does not include a tubular barrel portion "having a substantially constant cross section including a cylindrical outer surface and a cylindrical inner surface and it would not be possible to deform the

radial flange portion **28** which includes a frustoconical outer surface **46** radially outwardly as required for a male self-riveting fastening element much less a self-riveting fastening element for "high performance applications." It should also be noted that Claim 1 has been amended to recite that the outer surface of the tubular barrel portion is "cylindrical," deleting "generally." Finally, Claim 1 has been amended to specifically recite that the fastener element is formed of a high carbon steel having a hardness greater than 30 Rockwell C and Claim 5 already includes this limitation. The only similarity between the male self-riveting fastening element and the ***Vrana, et al.*** reference is that the flange portion does include radial teeth as noted by the Examiner.

The Applicant respectfully requests that the rejection of Claims 1 and 3 to 7 under 35 U.S.C. § 102(e) as anticipated by the ***Vrana, et al.*** reference be withdrawn because (1) the ***Vrana, et al.*** reference is not prior art as the ***Vrana, et al.*** reference is assigned to the assignee of this application and (2) the ***Vrana, et al.*** reference does not anticipate these claims.

U.S. Patent No. 2,269,395 of Foster, et al.

Claim 1 was rejected by the Examiner as anticipated by the Foster, et al. reference under 35 U.S.C. § 102(b). The Foster, et al. patent discloses a "Pipe Joint" for "connection of service pipes or branches to mains of gas and water supplies." (Page 1, col. 1, lines 1 to 3). The disclosed "nipple" **1** includes a tapered end **7** having an internal bead **8** which is deformed radially outwardly by a mandrel **14** having a tapered lower end **15** as shown in Figure 6 resulting in an external rib which is triangular in cross-section as shown in Figure 7. The pipe joint disclosed in the ***Foster, et al.*** patent would be completely unsuitable for a male self-riveting fastener and the frustoconical surface **7** and the internal rib **8** are necessary elements of the disclosed pipe joint. Thus, the pipe joint

disclosed in the ***Foster, et al.*** patent does not include a tubular barrel portion having a substantially constant cross section including a cylindrical outer surface and a cylindrical inner surface; the portion of the pipe joint below the shoulder 5 does not have an axial length equal to or less than sixty percent of the outer diameter and the pipe joint could not be formed of a high strength carbon steel having a hardness than 30 Rockwell C. The Applicant also respectfully submits that the pipe joint disclosed in the ***Foster, et al.*** patent is "unrelated art" to the self-attaching fastener of this invention and certainly would not be suitable for "high performance applications." The Applicant therefore respectfully requests withdrawal of the rejection of Claim 1 based upon the ***Foster, et al.*** patent.

U.S. Patent No. 5,868,535 of Ladouceur

All of the claims in this application (Claims 1 to 21) were rejected by the Examiner as obvious from the disclosure of the Ladouceur patent under 35 U.S.C. § 103 (a). The Ladouceur patent assigned to the assignee of this application does disclose a self-riveting male fastener of the type disclosed and claimed in this application. However, as set forth above, the self-riveting fastening element disclosed in the ***Ladouceur*** patent is not and ***cannot be formed*** of a high strength carbon steel having a hardness greater than 30 Rockwell C because the barrel will crack upon installation. Thus, the self-riveting male fastener disclosed in the ***Ladouceur*** patent is not suitable for high performance applications. Further, the outer surface of the barrel portion is not cylindrical and a patentable feature of the self-riveting fastener disclosed in the ***Ladoucer*** patent is the frustoconical outer surface. Further, the axial length of the barrel portion is not equal to or less than sixty percent of an outer diameter. Thus, it would not be obvious to modify the disclose of the ***Ladouceur*** patent to include the dimensional relation of the barrel portion as claimed or to make the

self-riveting fastener from a high carbon steel having a hardness greater than 30 Rockwell C.

Further, the Applicant respectfully submits that the "obviousness" rejection of the claims based upon the ***Ladouceur*** patent is based upon improper "hindsight" based solely upon the disclosure of this application. As stated by the U.S. Supreme Court in *Graham v. John Deere Co.*, 148 USPQ 459, 474 (Su. Ct. 1965), "One of the more difficult aspects of resolving questions of non-obviousness is the necessity to 'guard against slipping into the use of hindsight.'" Thus, the PTO has a greater burden of establishing that prior art would have taught or suggested the claimed invention to one of ordinary skill in the art and the Examiner cannot substitute hindsight based upon the disclosure of the application. The Applicant therefore respectfully requests withdrawal of the rejection based upon the ***Ladouceur*** patent.

U.S. Patent Publication No. 2001/0048859 A1 of Shinjo

Claims 1 to 7 were rejected as obvious from the disclosure of the ***Shinjo*** U.S. Publication based upon 35 U.S.C. § 103(a). The ***Shinjo*** Patent Publication does disclose a self-riveting male fastener. However, as admitted by the Examiner, the ***Shinjo*** Patent Publication does not disclose the dimensional relation of the tubular barrel portion 3 and the fastener is not and cannot be formed of a high strength carbon steel having a hardness greater than 30 Rockwell C. Although there is no disclosure of the relationship between the length of the tubular barrel portion 3 to the diameter A in the ***Shinjo*** Patent Publication, the axial length of the tubular barrel portion 3 appears to be substantially equal to the diameter A shown in Figure 1. Further, there is no disclosure of the preferred material from which the fastener is made and there is certainly no disclosure that the self-riveting male fastener should be formed of a high strength carbon steel having a hardness greater

than 30 Rockwell C. As set forth above, the testing conducted by the Applicant establishes that the tubular barrel portion disclosed in the ***Shinjo*** Patent Publication would crack when installed as disclosed if the fastener was formed of a high strength carbon steel having a hardness greater than 30 Rockwell C. The Applicant therefore respectfully requests withdrawal of the rejection based upon the ***Shinjo*** Patent Publication.

U.S. Patent No. 3,079,970 of Barry

The Barry patent discloses a "press insert" fastener which is actually a female fastener. The press insert fastener includes two components, including a press insert retainer **10** having a collar **24** shown in Figure 1 including a knurled portion **20**, an annular recess **22** having a frustoconical inner or bottom wall and a radial flange **12**. The internally threaded nut **30** shown in Figure 3 has a flange **32** including an outer diameter approximately equal to the diameter of the upper bore **26** of the retainer **10**. During installation, as shown in Figure 6, the knurled portion 20 is driven into the panel **16**, deforming the panel into the annular recess **22**.

The Applicant respectfully submits that the ***Barry*** patent does not disclose or suggest the claimed self-riveting fastener element of this invention. First, assuming that the tubular portion below the shank **18** is a "barrel portion," this portion does not include a cylindrical outer surface. To modify the ***Barry*** patent to include a cylindrical outer surface would make the press insert fastener ***inoperable***. Further, there is no disclosure in the Barry patent that the fastener element should be formed of a high strength carbon steel having a hardness greater than 30 Rockwell C. It is also believed that the press insert fastener disclosed in the ***Barry*** patent would be completely unsuitable for "high performance applications" because the push-off strength would not be adequate for such applications and

the disclosure of the ***Barry*** patent does not disclose or suggest the use of the press insert for such applications.

The Applicant therefore respectfully requests reconsideration and withdrawal of the rejection of Claims 1, 3, 4, 15 and 17 based upon the ***Barry*** patent.

U.S. Patent No. 3,125,146 of Rosan

The Rosan patent discloses a sheet metal fastener, including a body **22** having a bore **24** (which may be internally threaded) as shown in Figure 4 or externally threaded as shown at **96** in Figure 14 having a plurality of resilient fingers **30**, an abutment flange **34**, an annular recess or groove **36** and a pilot flange **32** as shown in Figures 1 to 5. The embodiment shown in Figures 13 to 17 do not appear to be relevant because the sheet metal fastener does not include a tubular barrel portion. However, the tubular portion defined by the annular groove **36** and the annular pilot flange **32** does not have a cylindrical outer surface and the inner surface **62** is also not cylindrical. The sheet metal fastener is installed in a panel **54** by first providing an opening **56** having "an upwardly projecting dimple **58** to increase the diameter of the opening and the end portion is received through the opening **56** and the panel is then flattened by driving the abutment flange **34** against the panel as shown in Figure 5.

The Examiner rejected Claims 1 to 13 and 15 to 20 as either anticipated by or obvious from the disclosure of the ***Rosan*** patent under 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a). The Applicant respectfully traverses this rejection. First, the sheet metal fastener disclosed in the ***Rosan*** patent does not include a tubular barrel portion having a substantially constant cross section including a cylindrical outer surface and a cylindrical inner surface. Second, there is no disclosure that the sheet metal fastener disclosed in the ***Rosan*** patent may be formed of a high strength carbon steel having a hardness greater than

30 Rockwell C. Finally, there is no disclosure or suggestion in the ***Rosan*** patent that this fastener could be used for "high performance" applications and, in fact, the fastener element disclosed in the ***Rosan*** patent would not be suitable for such applications.

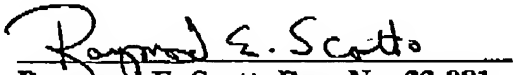
The Applicant further respectfully submits that none of the prior patents disclose or suggest the self-riveting male fastener and panel assembly as defined in Claims 8 to 21. The fastener and panel assembly defined in Claims 8 to 21 is ***specifically contrary*** to the teaching of the ***Ladouceur*** and ***Shinjo*** patents. As set forth above, there is no disclosure or suggestion in the ***Ladouceur*** and ***Shinjo*** patent of the dimensional relation of the barrel portion or that the fastener be formed of a high strength steel having a hardness greater than 30 Rockwell C. The Applicant further respectfully submits that the remaining patent cited by the Examiner are not relevant to the fastener and panel assembly for the reasons set forth above.

The Applicant therefore respectfully requests reconsideration and allowance of Claims 1 and 3 to 21 for the reasons set forth above.

Although it is believed that no fee is due for the filing of this Amendment, the Commissioner is authorized to charge our Deposit Account No. 08-2789 for any additional fees or credit the account for any overpayments regarding this Amendment. Further and favorable reconsideration of the outstanding Office Action is hereby requested.

Respectfully submitted,

HOWARD & HOWARD ATTORNEYS, P.C.



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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the attached **Amendment** is being facsimile transmitted to the Commissioner for Patents and Trademarks, Alexandria, Virginia, to the attention of **Examiner Jeffrey Andrew Sharp** from **Group: 3677** to facsimile number **(571) 273-1238** on **August 2, 2005.**

Tracy L. Smith

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